

Claims Listing:

Please cancel claims 1-111 and 131 in this application. Amendments to the claims are reflected in the following listing, which replaces any and all prior versions and listings of claims in the above-referenced application:

1. - 111. (Cancelled)

112. (Previously presented) An instrument for observation, treatment, or analysis of a sample of a liquid comprising:

a liquid input opening for receiving a liquid sample,

a first passage leading from said liquid input opening to an expanded liquid flow region,

at least one weir filter located tangentially along each side of said first passage between said liquid input opening and said expanded liquid flow region,

at least one filtrate channel located on each side of said first passage parallel to said first passage,

said at least one weir filter in communication with said first passage and said at least one filtrate channel located on the same side of said first passage as said at least one weir filter, and

said liquid flow expanded region comprising a plurality of parallel capillary channels sized to sustain a draw of said liquid sample through said first passage tangentially past said at least one weir filter by capillary action.

113. (Previously presented) The instrument according to claim 112, wherein said liquid sample is a complex fluid.

114. (Previously presented) The instrument according to claim 112, wherein said draw of said liquid sample through said first passage tangentially past said at least one weir filter by capillary action filters said liquid sample into at least one filtrate flow in said at least one filtrate channel and a remaining liquid sample flow in said first passage.

115. (Previously presented) The instrument according to claim 112, wherein said plurality of parallel capillary channels are sized to sustain a draw of said liquid sample through said first passage for a predetermined amount of time.

116. (Previously presented) The instrument according to claim 114, wherein said plurality of parallel capillary channels are sized to produce at least a nanoliter of said at least one filtrate flow from said at least one filter.

117. (Previously presented) The instrument according to claim 114, wherein said at least one filtrate channel further comprises a testing location in which at least a portion of said at least one filtrate flow is collected for analysis.

118. (Previously presented) The instrument according to claim 117, wherein the analysis of said at least one filtrate flow includes electro-optical analysis.

119. (Currently amended) The instrument according to claim 118, wherein ~~said the~~ electro-optical analysis comprises a laser, a first reflective sidewall at said testing location positioned to direct laser light from the laser through said test location, a photodetector, and a second reflective sidewall at said testing location positioned to direct laser light from said test location to the photodetector.

120. (Previously presented) The instrument according to claim 113, wherein said complex fluid is a biological fluid.

121. (Previously presented) The instrument according to claim 120, wherein said biological fluid comprises at least one formed element.

122. (Previously presented) The instrument according to claim 121, wherein said at least one weir filter lyses at least a portion of said at least one formed element.

123. (Previously presented) The instrument according to claim 121, wherein said plurality of parallel capillary channels are sized to control the degree of lysing of said at least one formed element.

124. (Previously presented) The instrument according to claim 112, wherein each capillary channel of said plurality of parallel capillary channels are about 45 μm wide and at least 10 μm in length.

125. (Previously presented) The instrument according to claim 112, wherein said at least one weir filter comprises a channel having width of about 200 μm along the side of said first passage, a height of about 1 μm , and a length of about 30 μm coupling said first passage to said filtrate channel.

126. (Previously presented) The instrument according to claim 117, wherein said analysis comprises at least one of an identification of at least one analyte in said at least one filtrate flow, a quantification of the concentration of at least one analyte in said at least one filtrate flow, and an isolation of at least one analyte in said at least one filtrate flow.

127. (Previously presented) The instrument according to claim 126, wherein said at least one analyte in said at least one filtrate flow comprises at least one of a protein, an amino acid, an enzyme, an electrolyte, a nucleotide, and a dissolved gasses.

128. (Previously presented) The instrument according to claim 112, wherein said expanded liquid flow region comprises a total width from about 0.4 to 2.5 mm and a length of from about 2 to 20 mm.

129. (Previously presented) The instrument according to claim 112, wherein said a plurality of parallel capillary channels have a cross-sectional dimension a , where $0.3 \mu\text{m} > a > 0.1 \mu\text{m}$.

130. (Previously presented) The instrument according to claim 114, wherein said at least one filtrate flow comprises a plasma filtrate.

131. (Cancelled)